

Foreword

Modifiable Risk Factors in the Prevention and Management of Type 2 Diabetes: Implications and Future Directions for China

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Diabetes, marked by an elevated concentration of blood glucose, presents a substantial global public health challenge. It is estimated that around 537 million adults (20–79 years) globally suffer from diabetes, primarily type 2 diabetes in 2021. This figure is projected to increase to 783 million by 2045. As of 2021, the countries with the greatest number of adults living with diabetes are China, India, and Pakistan (1). According to data obtained from the China Chronic Disease and Risk Factors Surveillance, the estimated prevalence of diabetes was 12.4% in 2018 (2). Diabetes is acknowledged as a multifaceted cardiorenal-metabolic ailment associated with diverse metabolic and homeostatic disturbances that evolve over time (3). Although genetics contribute to the susceptibility to diabetes, increasing evidence suggests that modifiable risk factors, such as lifestyle (including nutrition and physical activity) and socioeconomic status (SES), play a pivotal role in both preventing and managing the disease.

This special issue contains a collection of articles that explore the relationship between lifestyle choices, SES, and diabetes, along with its related complications. Physical activity proves to be a key aspect of diabetes prevention and control. Drawing from the China Kadoorie Biobank (CKB) data, Li et al. (4) underline that patients with diabetes were more prone to engage in low-level physical activities compared to non-diabetic counterparts. Corroborating this notion, Yu et al. (5), based on objectively measured physical activity, infers that an increase in daily step counts was correlated with lower odds of cardiovascular events among patients with type 2 diabetes in China.

The third paper in this issue of *China CDC Weekly* underlines the important role of dietary factors, particularly the consumption of red and processed meat, can have on diabetes prevention, specifically in East Asian populations. The research confirmed the positive relationship between the consumption of processed meat and the risk of diabetes (6). While moderate intake of unprocessed red meat was not related to higher diabetes risk, surpassing a certain consumption threshold could pose a risk for type 2 diabetes.

The concluding paper in this series delves into various risk factors for diabetes such as age, sex, SES, lifestyle choices, and metabolic factors. The study emphasizes the need for forming prevention strategies tailored to distinct age-specific risk profiles. In addition, it discourses on diabetes being a key risk contributor to cardiovascular complications and elaborates on its impacts across age categories (7).

This special issue emphasizes the modifiable risk factors such as diet, physical activity, and SES, for the prevention and management of diabetes within China. However, there remains an urgent need for additional research on the Chinese population. First, there should be an expansion in the scope of dietary factors considered in the studies, including but not limited to cooking styles (8), dietary chronotype (9), and microplastics from take-out foods (10). These additions could enhance the understanding of the relationship between dietary habits and the susceptibility to diabetes and related complications among Chinese population. Furthermore, the emerging implications of wearable technology, such as accelerometers, relating to health outcomes have been gaining prominence (11–12). The implementation of this wearable technology could potentially facilitate the prevention and management strategies for diabetes; hence, more empirical evidence derived from Chinese cohorts is crucial. Lastly, the realm of precision medicine, which entails multi-omics and pharmacogenomics, is showing great potential for increasing our understanding of physiology and can contribute to proactive prevention strategies and targeted therapies.

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